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ABSTRACT

This study was conducted to investigate how teacher educators might help preservice teachers enrolled in a science methods course understand the need for mutual respect rather than coercion between pupil and teacher in an elementary classroom. An evaluation instrument was developed that consisted of a pre and post open-ended response to a quotation from Albert Einstein in which he stated that the worst thing for teachers to do is to use fear, force, and artificial authority. An experimental group (N=19), randomly divided into 3 sections, received a one-period lesson in cooperative learning. Each group of students was assigned one of three situations to analyze and write about: (1) five practices used by guards to manage the prison population; (2) five ways in which community volunteers are probably treated to encourage continuance of their efforts; and (3) five characteristics of a favorite teacher from public school years. The control group (N=20) did not participate in the lesson. Results show no significant difference in post-test scores between treatment and control groups. Some attitudinal change did occur over the course of the semester, but it was considered to be more a function of modeling and explaining by the instructor than the result of a single lesson. (Author/LL)

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PRISONERS OR VOLUNTEERS: DEVELOPING MUTUAL RESPECT IN THE ELEMENTARY SCIENCE CLASSROOM

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PRISONERS OR VOLUNTEERS: DEVELOPING MUTUAL RESPECT IN THE ELEMENTARY SCIENCE CLASSROOM

Abstract

This study investigates how university instructors might help preservice teachers in a science methods class understand the need for mutual respect between pupil and teacher in an elementary classroom. The authors devised an authentic treatment lesson which investigated the manner in which other institutions in the world beyong the school treat prisoners as opposed to the manner in which they treat volunteers.

The evaluation instrument consisted of a pre and post open-ended response to a quotation from Albert Einstein in which he states that the worst thing for teachers to do is use fear, force and artificial authority. A description of the rubric used to measure the depth of understanding expressed by the respondents and an explanation and defense of this alternative method of assessment is included.

Treatment students were given a one period cooperative learning workshop that randomly divided the class into thirds for three different assignments that involved analyzing, sharing, and charting. Both the treatment and control group had the same instructor and participated in 10 hours of field experiences.

There was no significant difference in post test scores between treatment and control groups as both groups showed a mean gain of 0.8 or nearly one rating category. The change in attitude was thought to be more a function of the modeling and explaining by the instructor throughout the semester as opposed to being the result of a single lesson.

PRISONERS OR VOLUNTEERS: RESPECT AND THE ELEMENTARY SCIENCE CLASSROOM

Richard A. Huber, Ann Lockledge and Judith A. Hayn

Students today are exposed to many teaching behaviors that they are told will make them effective instructors. But how they conduct themselves in their relationships with students is often left to chance or the model set by the cooperating teacher. In providing models of effective disciplinary tactics, the qualities of a mutually considerate relationship are often put aside. Treating students with respect then becomes teaching them to respect authority. It is most important that professors in schools of education use a variety of techniques and models to convey their concerns regarding this fundamental aspect of teaching.

Albert Einstein suggested that teachers who do not develop a mutually respectful classroom instead create systems of "artificial authority." (See Figure One.) Certainly many of these artificial systems exist and can are described by students.

Background

The authors who all try to model this type of consideration in their classes, wished to know if a particular technique could be isolated that would develop in students the ability to describe techniques for controlling a public school classroom through mutual respect rather than coercion. It was hoped that preservice teachers could both understand and be able to articulate that holding someone accountable should not be demeaning but affirming and empowering.

In order to be able to measure student's attitudes and ability to articulate them, it was first necessary to fashion an instrument that could be used both at the beginning and the end of the semester. The authors were desirous of using an instrument in the authentic evaluation mode -- testing that involves students in answering the sorts of questions they might confront in the real world. Authentic or alternative assessment (Worthen, 1993) is viewed as an alternative to traditional multiple-choice standardized achievement tests and involves direct examination of student performance on significant tasks that are relevant to life outside of school.

In considering if the student can move beyond the classroom setting and consider problems in a larger context, the use of an open ended response question that asks for higher order thinking regarding the application of knowledge seemed indicated. Newman (1992) says we must be sure that students are asked to consider alternatives and to make choices based on knowledge. Students need to be thinking critically about substance and taking a theoretical stance. The problem they are asked to solve should be one that is likely to be addressed in the world beyond the immediate classroom and one about which they can freely express their views. Open ended questions differ from the traditional essay in that they are more pointed and require a concise answer that shows analysis of information presented in terms of situations that might develop or problems to be confronted. It was this type of response that the authors chose.

Use of an open ended response for evaluation requires the use of a rubric for grading. The rubric for a question sets out the standards a teacher could reasonably expect in an answer from a prepared student. It is usually based on a scale that goes from minimally acceptable to clearly understood and analyzed. The assessment can be

considered authentic because it will measure depth of understanding and deal with both content and process. Such a rubric had to be constructed

It was known that at least two variables existed during the course of the class that would have some effect on the outcome. The college instructor, a longtime public school teacher and supervisor, was committed to modeling the type of interactive behavior that he felt should be used when approaching students in public school classrooms. Secondly, the students would spend at least 10 hours observing and teaching in one local elementary school classroom and were asked to reflect on the experience. Results of these efforts had never been measured in terms of growth in ability to assess relationships. It was known that both of these could affect the outcome.

Further it was felt that one specific lesson should be devised to help with the overall effort to develop understanding of the importance of mutual respect in elementary science classes. This specific lesson was developed and is described below in the procedure section.

Sample

Treatment and control groups were set up to compare the effect of the specific lesson. The population was composed of students enrolled in two Science methods classes during the spring semester. Each of the students in the two classes participated in the pre and post instruments. The experimental group (n=19) consisted of students ranging in age from 20 to 43 with none to three previous classes in pedagogy. The control group (n=20) which did not receive the treatment lesson was similar in background and preparation. Only those students present for both the pre-test and the post-test were counted in the sample.

Method

Students in both the experimental and control groups were asked during the first class period of the semester to respond to a quotation from Albert Einstein in which he states that the worst thing for teachers to do is use fear, force and artificial authority. They were asked to give an example of how students would be treated if they were to follow Professor Einstein's admonition. The responses were collected without discussion and the students encouraged to reflect further on the meaning of the quotation. Students were asked to respond to an identical question near the end of the course.

A SCIENTIST THINKS ABOUT THE CLASSROOM

> Albert Einstein, one of the all time greats of the scientific world, had something to say about the way students should be treated in the classroom. Listen to his words as I put them on the overhead. Take a few minutes and react to his idea that the "worst of all evils" for a school is to be based on "fear, force, and artificial authority." Describe the manner in which you expect to treat your students in the classroom. Compare your goal with a similar situation in reality and explain how you might adapt this model for using "the fewest possible coercive measures."

With the help of a writing specialist, a rubric was constructed to measure the depth of understanding expressed by the respondents. A group of 3 professors and one graduate assistant discussed the rubric and each response was scored by at least two graders until a mutually acceptable rating could be assigned. It was agreed that a .5

could be used if the answer had qualities between two ratings. Both the pretest and the post test were scored with the same rubric. Field experiences and modeling by the professor were continued as in previous semesters in both sections.

Treatment Procedure

Students in the experimental group was given a one period cooperative learning workshop as follows. First the facilitator explained that setting up cooperative learning and being a facilitator of learning has many levels and many ways of interacting and that they were going to do an exercise that involved several of these modes.

The class was randomly divided into thirds and each third given one of the three assignments below. Each individual was told to spend seven minutes writing an answer to the assignment. The assignments were as follows:

> WRITING ASSIGNMENT A: Prisons and jails were not designed to be places that people would voluntarily choose to stay. Therefore, all of us can envision what the interactions between prisoners and their guards necessarily would be like. Make a list of approximately five practices used by guards and wardens that help them to manage the prison populations. Include any techniques, rewards, or sanctions that are usual in such circumstances. Explain very briefly why such actions would be necessary.
>
> WRITING ASSIGNMENT B: All of us know that volunteers are the people who keep a lot of community activities going. Such volunteers fight fires,

man soup kitchens, organize parades, deliver meals, work at museums, and provide personal touches in hospitals. List approximately five ways that these volunteers are probably treated to encourage them to continue their efforts. Then imagine yourself in charge of a volunteer group. Explain what would you be careful to do and say to convey your expectations including such things as manner of address, making assignments, and giving explanations.

WRITING ASSIGNMENT C: All of us remember fondly certain teachers from our public school years. Make a list of approximately five characteristic behaviors that made those teachers memorable. Then try to decide which one of those teachers you would most want to be like. Describe one incident with that teacher that makes you remember and want to emulate him or her.

After the writing assignment was completed, each third came together as a group where they exchanged information concerning what they had written and made a prioritized composite list. Each group was then asked to read their assignment and share some of their ideas. Afterward a comparative list from each group was written on an overhead transparency using categories such as: controls present, time decisions, rewards and sanctions, manner of address, behavior requirements, nature of expectations.

The class was then asked about their conclusions about how one treats a student to let them know you respect them. Some of the participants read parts of their written work to explain why such a conclusion was reached. Participants were also asked to react to the session and the nature of the learning that took place.

Analysis

The data generated by the experimental and control groups were analyzed using both quantitative and qualitative procedures. The rubric for the scoring consisted of the following:

RUBRIC FOR SCORING REACTION TO THE EINSTEIN QUOTATION

For a 1:
Reaction at inadequate level
No support for ideas
Inadequate description
No Comparison
Inadequate explanation

For a 2:
Reaction at acceptable level
Very little support of ideas
Limited description
Comparison lacking in usability
Little explanation

For a 3:
Reaction at high level
Limited support
Acceptable description
Acceptable comparison
Adequate explanation

For a 4:
Reaction at outstanding level of comprehension
Support for reaction to words in quotation
Extensive description of treatment of students
Appropriate or creative comparison
Outstanding explanation of classroom adaptation

Findings

At the beginning of the course it was found the scoring ranged from 1.5 to 3.5 with an average of 2.6 and 2.3 for the treatment and control groups respectively. Some students were able to relate to other experiences both in and out of school, most did not. Few had a solid idea of what it meant to plan for establishing relationships between student and teacher. If they used references it was almost always to a university class.

For both treatment and control groups the post test scores exceeded the pretest scores by a mean of 0.8 or nearly one rating category. There was no significant difference in post test scores between treatment and control groups. The scores ranged from 1.0 to 4.0 in the control group and from 2.0 to 4.0 in the treatment group. Three out of the 20 students in the control group had a decrease in scores. The mean score for the two groups was 3.1 and 3.4 with the median at 3.0 and 3.75. The higher final scores for the experimental group seemed more a function of having started with slightly higher scores than being a result of the treatment.

The researchers concluded that one isolated lesson does not make a great deal of difference in the growth of attitudes. It is the actions, attitudes and modeling of the instructor during the entire semester that has an impact on the students. Both groups had an opportunity to observe and participate in public school classrooms and to reflect on the experience with the instructor.

Not one writer among the students in the treatment group referred back to the Prisoners and Volunteers lesson but rather wrote descriptions much closer to the educational arena. They did not seem concerned with finding an authentic

comparison with other institutions. Many still seemed unable to make the connection between plans for their own classes and experiences in the broader world beyond the school. Instead they garnered their examples of proper attitudes from observations in classes in which they participated, their school days memories, or in their own relationships with instructors at the university. In general by the end of the course all students were able to articulate the manner in which they wanted to structure relationships although some still held to a more authoritarian pattern than that advocated by the instructor.

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OVERHEAD TRANSPARENCY

AN OBSERVATION ABOUT SCHOOLING

To me the worst thing seems to be for a school principally to work with methods of fear, force, and artificial authority. Such treatment destroys the sound sentiments, the sincerity, and the self-confidence of the pupil. It produces the submissive subject. It is no wonder that such schools are the rule in Germany and Russia. I know that the schools in this country are free from this worst evil; this also is so in Switzerland and probably in all democratically governed countries. It is comparatively simple to keep the school free from this worst of all evils. give into the power of the teacher the fewest possible coercive measures, so that the only source of the pupil's respect for the teacher is the human and intellectual qualities of the latter.

.... Albert Einstein

Figure One

SPRING SCIENCE CLASSES

	CONTROL GROUP			EXPERIMENTAL GROUP		
	Pretest	Posttest	Change	Pretest	Posttest	Change
1	1.0	3.0	+2.0	3.5	4.0	+0.5
2	2.5	3.5	+1.5	1.5	2.0	+0.5
3	3.0	2.0	+1.0	2.0	3.5	+1.5
4	1.0	3.0	+2.0	3.0	4.0	+1.0
5	2.5	2.5	---	2.5	4.0	+1.5
6	1.5	4.0	+2.5	3.5	4.0	+0.5
7	2.0	1.0	-1.0	2.0	2.0	---
8	3.5	4.0	+0.5	2.0	4.0	+2.0
9	2.0	3.0	+1.0	2.5	3.5	+1.0
10	2.0	3.5	+1.5	3.0	4.0	+1.0
11	2.5	3.0	+0.5	3.5	4.0	+0.5
12	2.0	3.0	+1.0	2.0	2.5	+0.5
13.	2.0	4.0	+2.0	2.5	4.0	+1.5
14	1.5	4.0	+2.5	2.5	3.5	+2.0
15	2.5	3.5	+1.0	3.0	3.5	+0.5
16	1.5	3.0	+1.5	2.0	2.5	+0.5
17	2.5	3.0	+0.5			
18	3.0	4.0	+1.0			
19	3.0	1.5	-1.5			
20	3.0	2.5	-.0.5			
MEAN	2.3	3.1	+0.8	2.6	3.4	+0.8
MEDIAN	2.5	3.0	+1.0	2.25	3.75	+0.75

FIGURE TWO